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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,504	06/30/2003	Douglas M. Beall	SP03-086	2164
22928	7590	08/10/2004	EXAMINER	
CORNING INCORPORATED			SAMPLE, DAVID R	
SP-TI-3-1			ART UNIT	
CORNING, NY 14831			PAPER NUMBER	
			1755	
DATE MAILED: 08/10/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

### Application No.

10/611,504

### Applicant(s)

BEALL ET AL.

### Examiner

David Sample

### Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11/20/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☒ Claim(s) 1,8,10,11,13,14 and 22-24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2003.11.20.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

The specification is objected to for the following informalities:

The specification refers to lithium oxide as  $\text{LiO}_2$  rather than  $\text{Li}_2\text{O}$  in the following instances: paragraph [0007], lines 2-4 and paragraph [0015], lines 2-5. Correction is required.

### ***Claim Objections***

Claims 1, 8, 10, 11, 13, and 14 are objected to because of the following informalities:

Lithium oxide has been written as  $\text{LiO}_2$  rather than  $\text{Li}_2\text{O}$  in the following instances:

Claim 1, line 9;

Claim 10, line 3;

Claim 11, line 31;

Claim 13, lines 2 and 4; and

Claim 14, line 3.

Claim 8 depends from claim 9 (a subsequent claim) rather than from a previous claim.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Chyung et al. (US Patent No. 5,962,351).

Chyung et al. discloses a method of making  $\beta$ -spodumene ceramic bodies by mixing a mineral raw material with other components to form a plastic mixture, kneading the mixture, extruding the mixture, drying and firing. See col. 2, lines 17-49.

As to claims 2 and 3, the reference discloses including petalite and kaolinite clay at col. 2, lines 42-46.

The recitations of claims 4-6 can be found in the reference at col. 3, lines 53 to col. 4, line 23 and col. 5, lines 58-65.

The recitations of instant claims 7 and 8 can be found at col. 4, line 54 to col. 5, line 23.

The recitations of instant claim 9 can be found in the reference at col. 5, lines 14-18.

Claims 1-9 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Day (US Patent No. 5,403,787).

Day discloses a method of making  $\beta$ -spodumene ceramic bodies by mixing a mineral raw material with other components to form a plastic mixture, kneading the mixture, extruding the mixture, drying and firing. See, e.g., col. 5, lines 25-67.

As to claims 2 and 3, the reference discloses including kaolin clay in the batch at col. 5, lines 60-68.

The recitations of claims 4-6 can be found in the reference at col. 4, lines 30-40, and col. 6, lines 14-26.

The recitations of instant claims 7-9 can be found in the reference at col. 6, lines 27-35.

The recitations of instant claim 12 can be found in the reference col. 5, lines 10-26, and col. 6, lines 50-59.

Claims 1-4 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al. (EP 997 448 A).

Yamamoto et al. discloses a method of making a  $\beta$ -spodumene ceramic material by mixing a mineral raw material (petalite and clay) with other components to form a plastic mixture, kneading the mixture, extruding the mixture (i.e., shaping), drying and firing. See page 3, paragraph [0013].

As to claims 2 and 3, the reference discloses petalite and MgO (magnesia) as raw materials. Id., and Examples 1-3, page 9.

As to claim 4, the reference discloses employing water and a binder. See page 6, paragraph [0045].

As to claim 7, the reference discloses extrusion at page 4, paragraph [0026].

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 6, 9-11, 13-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (EP 997 448 A).

As noted above, Yamamoto et al. discloses a method of making a  $\beta$ -spodumene ceramic that anticipates the process of claim 1.

Yamamoto et al. fails to disclose the organic additives recited in claims 5 and 6. However, the disclosed additives are notoriously well known additives for use in ceramic extrusion. Therefore, it would have been obvious to one of ordinary skill in the art to have employed the organic additives recited in claims 5 and 6 in the process of Yamamoto et al. because the organic additives were known in the art to be helpful in ceramic extrusion.

As to claim 9, Yamamoto et al. discloses sintering for 0.5 to 1.5 hours at 1050-1350°C. See paragraph [0051] bridging pages 6 and 7. These sintering times and temperatures have overlapping ranges with the time and temperature disclosed in claim 9 when considering one significant figure. In other words, the disclosure of 1.5 hours by the reference is 2 hours when considering only one significant figure, as claimed in claim 9. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

As to the claims 10, 11, and 13-21, the reference discloses forming a  $\beta$ -spodumene ceramic containing 1-10 wt% MgO (among others) as a sintering aid. See paragraphs [0031] and [0038]. The inclusion of this amount of MgO appears to overlap the amount of MgO referred to in instant claims 10, 11, 13 and 14.  $\beta$ -spodumene has the formula of  $\text{Li}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 4 \text{SiO}_2$ . Replacing 50 mole percent of the  $\text{Li}_2\text{O}$  results in a composition  $\text{Mg}_{0.5}\text{LiO} \cdot \text{Al}_2\text{O}_3 \cdot 4 \text{SiO}_2$ . The examiner calculates that this composition contains 5.5 wt% MgO. This calculation ignores the zircon, however, the examiner believes that it is sufficient evidence that the reference has

Art Unit: 1755

overlapping range of MgO with the ceramic recited in claims 10, 11, 13 and 14. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

The recitations of instant claims 15-21 can be found in the reference at paragraph [0030].

### ***Allowable Subject Matter***

Claims 22-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art fails disclose or suggest a  $\beta$ -spodumene ceramic containing 10-65 mole% of the  $\text{Li}_2\text{O}$  substituted with  $\text{MnO}$ ,  $\text{CoO}$  or  $\text{MgO}$ , and having the recited porosity.

### ***Conclusion***

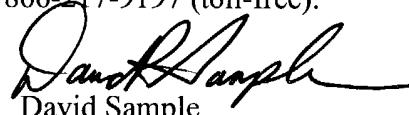
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Sample whose telephone number is (571)272-1376. The examiner can normally be reached on Monday to Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell can be reached on (572)272-1362. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1755

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "David Sample", with a stylized flourish extending from the end.

David Sample  
Primary Examiner  
Art Unit 1755